

HORSHAM AMATEUR RADIO CLUB

HARCNEWS

Coming Shortly

July 3rd Club Evening Broadband Internet and 47GHz
Satellite Links by Nick Bransden

Aug 7th Club Evening SSB field Day Discussion and DF
Hunt

July 2003

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Dayton and Friedrichshafen, *by G4EFO.*

The Club talk was a slide show of these two famous amateur radio events. We saw many digital photos and video camera video of both; some of the pictures seemed to get smaller and smaller, but we got the picture!

Without any doubt, the Dayton event was the best because not only were the best bargains available but a giant raffle ended the event with huge quantities of goodies given away at the end. It was interesting to know what happens if you win a 132 foot vertical mast!

To get to Dayton involves a long drive as a nearby international airport does not exist.

Outside the arena is a gigantic car boot sale of all sorts of radio gear. Anything that the amateur radio companies find not selling well is almost given away such as transceivers with lcd camera displays. Normally the weather is very kind, but occasionally it does rain a bit. Like everything in America, the rain is bigger than here, so when it rains, it rains! The whole place

looks like a paddling pool.

Friedrichshafen is a completely different event. Amateur radio kit is much more expensive in Germany so bargains are not so easy to come by.

But on the other hand the event is next to Lake Constance which seems to have lots of bars along the waterside and boat trips. It was possible to obtain cheap air flights there but the airlines have realised that this event generates a lot more traffic so have jacked up the prices!

After the show, we were asked about changing repeater frequencies due to interference with another repeater in Cambridge. It was suggested that a 12.5kHz channel be used on an empty channel rather than compete with a south London repeater.

Finally we had a demonstration of some rope tricks with the comment that give someone enough rope and he will hang himself. Dunno about that, but the tricks were very impressive!

Midsummer Madness...

'Twas a fine warm sunny Sunday morning" until the HARC Summer Fox Hunt held on the 15th June! Once holed up in my lair at the foot of Cissbury Ring just to the east of Findon, 'Foxy' was ready for the first transmission at 10 am. Six teams had assembled at Robin's qth for the start.

I thought that the location I had chosen was going to be less of the challenge it proved to be. My signals were reported to be weak and watery at the start, but could be copied OK. I was running my normal mobile set up, an FT90 running nominally 50 watts into my ¼ wave 2m mag mount on the rear of the roof of my car.

Tony G3NPF who was only 5

miles away was astonished to find that he could not copy my signals at all! Cissbury Ring looks to be a good site, although the ground to the north rises from 138m to 230m about a mile away.

This was obviously the cause of the problem, my signals being in the shadow just north of the Downs. After the fox hunt I checked to make sure that the rig was in fact delivering 50 watts because of the poor reports. I am pleased to say that all was working to spec.

Of the six teams, four found the fox, one did not finish and just ran out of time and one retirement (I suspect to get to the pub early!).

The results were as follows:

1. 11:04 G3ZBU Alister with M0DEY, 2E1IGA and M3GCR.
2. 11:30 G4EFO Mick
3. 12:17 G3PYC Ron
4. 12:29 G3SWC Bryn with Ava.
5. G4TPO Steve who just run out of time.
6. G3OGP Robin and Pat, retired...

After all had finished I followed the hunters to the Franklin Arms in Washington village just off the A24 for a well earned pint, where we were joined by Tony

and Anne (G3NPF and M1AIM). Well done To all that took part, see you again at the next Fox Hunt. 73's Foxy (G4LRP).



1st G3ZBU, M0DEY, 2E1IGA and M3GCR. (complete with some rather dubious foxes!)



2nd G4EFO (my life!)

Alister's Archives:

July 2003

This month is appropriate to discuss DRM (Digital Radio Mondiale) as it is likely to become 'live' in mid-June. DRM is a digital transmission system that is appropriate to medium and short wave bands, and the basic idea is to use a 20kHz bandwidth to send voice, music and data with digital quality by transmitting many carriers in this bandwidth, each of which is slowly modulated.

At HARC we had a demonstration of DAB a few years ago by someone from the BBC's R&D section at Kingswood Warren near Reigate. DAB is a VHF transmission of 1500 carriers over a 1.5MHz bandwidth when a bouquet of services is provided. For example on one transmitter Radio 1,2,3,4 and 5 all share the same band simultaneously. Many transmitters can share the same frequency.

Normally this would end in disaster as the information would cancel out at certain distances from each transmitter, but the clever part is that some carriers

would add up while others cancel. Redundancy in the data allows all information to be decoded correctly and the user's software selects only the required carriers to decode, for example, Radio 3.

DRM only has 1 to 4 audio channels plus data on the 20kHz channel, because it would be difficult to use 1.5MHz bandwidth on the HF bands. Stereo is therefore possible.

How do we receive DRM? If the receiver has a wide 20kHz IF bandwidth, it is easy to build a converter to down-convert the IF to audio frequency; conversely many HF receivers can be modified for a wider bandwidth.

Circuit modifications for many common receivers is available on the DRM web site. It is also easy to build a direct conversion receiver to receive DRM.

The audio signal sounds like white noise (hiss), and this is fed into a suitable sound card on

a PC or laptop computer. By suitable, they specify a sampling rate of 48kHz, no AGC and simultaneous record and playback.

The next step is to obtain the necessary software. This can either be bought for 60 euros from the DRM website, or for those with a masochistic tendency, free software source code can be found. The latter technique involves downloading vast megabytes of software to build (with Microsoft Visual C) several modules. Unfortunately the free software is constantly updated and so only versions of

old source code will compile so it involves trawling around the web to find versions that are compatible.

One interesting technique used by the bought version of software is a method that effectively doubles the perceived bandwidth from 10 to 20kHz. It looks at the audio spectrum and calculates what the higher frequencies should be like!

For example, square waves only generate odd harmonics, so the software looks for this pattern and generates higher frequencies in the same series. This is really quite clever.

HARC August Meeting

Unfortunately again this year we have had to cancel our usual August meeting. The owners of the hall have reserved the hall for a Brownies/ Guides event. So after consulting with the committee, it has been decided to turn the August meeting into a social meeting at the 'Lamb' at Lambs Green.

The pub has recently been purchased and refurbished by WJ King (of the old King and

Barnes). So why not come along and sample some of the new 'Horsham Ale'.

But for those who like a challenge before quenching their thirst, we will be holding an evening 'Fox Hunt', starting a Mannings Heath at 7pm. And yes the pub will be the Lamb! Foxy should be somewhere nearby (within 5 miles!). Final details next newsletter.



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